

PROCEEDINGS
OF THE
GENERAL MEETINGS FOR SCIENTIFIC BUSINESS
OF THE
ZOOLOGICAL SOCIETY OF LONDON.

January 17, 1899.

Dr. ALBERT GÜNTHER, F.R.S., V.P., in the Chair.

The Secretary read the following report on the additions to the Society's Menagerie during the month of December 1898:—

The total number of registered additions to the Society's Menagerie during the month of December was 80, of which 20 were by presentation, 1 by exchange, 19 by purchase, 35 were received on deposit, and 5 were born in the Menagerie. The total number of departures during the same period, by death and removals, was 97.

Dr. F. P. Moreno exhibited and made remarks upon the original specimen of the recently described mammal *Neomylodon listai*, which he believed to be a portion of the skin of one of the old Pampean Mylodons now quite extinct.

Mr. Slater read some extracts from letters recently received from Mr. J. S. Budgett, F.Z.S., who had been sent by the Council on a scientific mission to the Gambia (see P. Z. S. 1898, p. 852).

Mr. Budgett had arrived at M'Carthy's Island, 127 miles up the river, on Nov. 11, and up to the date of his last letter (Dec. 8) had been principally occupied in collecting Fishes. He had obtained a large number of *Polypteri* of different sizes, the

largest being about 19 inches in length. The ovaries of the females did not appear to be nearly ripe, and, according to native reports, these fishes did not spawn until the wet season. Only two of the whole number possessed external gills. Altogether, examples of about twelve species had been procured, amongst which were two of *Mormyrus*, a *Malapterurus*, several Siluroids, and a Sword-fish, 8 feet 6 inches in length.

Mud-fish (*Protopterus*) were stated by the natives to be abundant in the adjoining swamp, but Mr. Budgett had not yet succeeded in obtaining specimens.

Mr. Budgett was also collecting Birds and Insects (principally Orthoptera and Hemiptera).

Mr. A. H. Cocks, F.Z.S., exhibited some living specimens of supposed hybrids between the Stoat (*Mustela erminea*) and the Ferret (*M. furo*), and remarked that it was only on seeing the first of his specimens that his scepticism as to the possibility of such hybridity had been removed. Early in 1898 he had seen an advertisement respecting some half-bred Stoats and Ferrets, and had purchased three of them; and was so satisfied as to their genuineness, that he subsequently purchased the remainder of the breeder's stock, making six specimens in all. One female died from foot-rot; the second became pregnant to a Polecat, but miscarried almost at the last moment; the third (exhibited) was at the date of purchase said to be a week gone in young to a male hybrid purchased at the same time, and in due course produced a fine litter of 4 males and 1 female (one of the males was also exhibited). The breeder (a railway signalman) had made most positive and straightforward statements as to the animals being the undoubted offspring of a male Stoat and female Ferret (both white and dark), and Mr. Cocks had taken an opportunity to interview him personally; he stated that he had bred altogether some six litters between Stoats and Ferrets, and considered such cross, if anything, easier to breed than pure Ferrets. At the time of Mr. Cocks's visit, a young Weasel was sharing a hutch with a pair of Ferrets.

The specimens, including the second generation, were exactly alike, except the father of the second generation, which was somewhat paler but with identical markings, and was probably born from a white Ferret. Ferrets of course varied very greatly in the body-colour, but Mr. Cocks had never seen any Ferrets with exactly the body-colour or texture of pelage as these, and this improvement on the ordinary quality of a Ferret's pelt was seen in Polecat and Ferret crosses. The following points also showed a resemblance to Stoats:—bright yellow throats; a small spot of yellow on the (true) knee; the distal portions of the feet were white, the colour terminating abruptly; the ears were broader than a Ferret's, and much more so than a Polecat's; the moustacial bristles were finer and more numerous than in a Polecat, but

possibly this last point might not hold good in a large series of Ferrets. Of the British *Mustelidae*, the Stoat had by far the biggest feet in proportion to its size; the Polecat had relatively very small feet, those of Ferrets being decidedly larger; while the feet of these hybrids were markedly larger than the normal size of those of Ferrets.

Mr. Cocks also exhibited the skull of the reputed hybrid which had died; together with, for comparison, a skull of a Stoat, of a Polecat, and of a Polecat-Ferret cross (*cf.* 'Zoologist,' 1880, p. 396).

Mr. R. E. Holding exhibited some specimens of malformed antlers of the Axis and Fallow Deer, and made the following remarks upon them:—

"The Axis Deer (*Cervus axis*) (fig. A, p. 4) lived over three years in the Manchester Zoological Gardens, and on its death the body was kindly sent to me by the proprietors, Messrs. Jennison. For a considerable portion of this time it had seemed to be in ill-health. The horns were never shed during that time. About two years ago the soft tumour-like excrescences began to form at the base of the horns. I saw it early last year, and it was then apparently suffering from some wasting disease, probably tuberculosis. It died early in December. There was unfortunately *no post-mortem*; but judging from numerous notes and specimens collected, and from records in veterinary pathology, I think the specimen is interesting as showing the intimate association between continued ill-health and defective horn-growth.

"The Fallow Buck (*Cervus dama*) (fig. B, p. 4) was five years old when shot in August last and was in good condition. Throughout last year it had grown a perfectly normal pair of horns. The abnormality of the left horn is apparently due to a purely local cause, viz., imperfect formation of the "burr" directly after shedding the horns, causing the temporal artery, which supplies the blood to the horn when at the velvety stage, to course through a hole in the centre of the burr, and so dividing the beam up into points. Some indication of disease at the pedicle is also apparent."

Mr. G. E. H. Barrett-Hamilton, F.Z.S., exhibited some specimens of European Squirrels, *Sciurus vulgaris* Linnæus, to illustrate the local colour-variations. He pointed out that the British Squirrel was as different from those found on the Continent as any animal could well be, being distinguishable at all seasons of the year and not intergrading with Continental specimens. Yet naturalists had been slow to recognize this fact; and the extraordinary seasonal changes in the coat of the animal (unparalleled, he believed, among mammals) had never been systematically studied until taken in hand by Mr. Oldfield Thomas (see 'Zoologist,' 1896, p. 401). The correct name for the British Squirrel (as had been pointed out by Mr. Thomas) appeared to be *Sciurus leucurus*¹ Kerr.

¹ Spelt *leucourus* by Kerr (*cf.* 'Animal Kingdom,' p. 256, 1792).



A. Malformed antlers of Axis Deer.

B. Ditto of Fallow Deer.

It differed from the Continental Squirrel of all localities in the fact that the tail was never red (except occasionally in a few quite young specimens, and then never so bright as in Continental specimens), but brown, and that it bleached regularly each season to a dirty cream or straw-colour.

On the Continent of Europe the Squirrels of all localities were greatly affected with total or partial melanism, which made them rather a difficult subject for study. Excluding the melanisms, which had from time to time received names,—such as *S. niger* Kerr 1792, from Lake Baikal, *S. alpinus* F. Cuvier 1821, from the Pyrenees, and *S. italicus* Bp. 1838, from Italy,—Mr. Barrett-Hamilton stated that he knew of three subspecies of Squirrel in Northern and Central Europe, of which the first was found in Germany, Northern France, Belgium, Holland, and Switzerland, and was distinguishable all the year round by its bright red colour. In the North and East, the Central European Squirrel met and intergraded with a lighter red form, which in winter became almost grey, while the typical *S. vulgaris* of Linnæus would appear to be restricted to a comparatively small area in South Scandinavia. The latter approached nearest to *S. leucurus*, but was at once distinguishable by the redness of the tail, which, moreover, did not bleach. To all these forms, except the typical *S. vulgaris*, the names given to them by Robert Kerr in 1792 appeared to be applicable. Their distribution was in accordance with what might be expected from a knowledge of the existing climatic conditions of Europe; and it was interesting to find the milder portions of Scandinavia inhabited by a Squirrel which approached more nearly to the British than to any other form. The occurrence of this form might be parallel to that of a Wren, *Troglodytes bergensis*, which had been described by Stejneger from South Scandinavia. It was also interesting to find that the light red Squirrel of Northern Scandinavia, Lapland, and Russia occurred farther south in proportion to the extension of its range eastward and inland, and was thus found in Poland, Eastern Prussia, and Hungary.

Of the Squirrels of South Europe he had nothing to say for the present. For the proper appreciation of the local colour-variations of the common European mammals a large series of skins collected in different localities was essential, and the little already accomplished towards the accumulation of such a series had been largely due to the energy of Mr. Oldfield Thomas.

The following was a brief diagnosis of the colour-distinctions of the European subspecies of *Sciurus vulgaris*, together with that of one subspecies from Siberia:—

SCIURUS VULGARIS RUFUS Kerr, Animal Kingdom, p. 255 (1792).

Hab. Central Europe: North of France, Belgium, Holland, Germany (except the east), Switzerland, and parts of Northern Austria.

Colour—of ear-tufts, body, and tail red all the year round, the

winter coat in perfectly typical specimens only differing from that of summer in its much greater thickness. I have seen specimens from a number of German localities, in the more northern of which the winter coat contains a more or less amount of white or grey hairs on the flanks, thus intergrading with the next subspecies.

SCIURUS VULGARIS VARIUS Kerr, *op. cit.* p. 256 (*nec* Pallas, Zoogr. Ross.-As. 1831, i. p. 183).

Hab. Northern Scandinavia, Lapland, Northern and Central European Russia, Poland, East Prussia, parts of Hungary, and Western Siberia.

Colour—in summer red, but lighter than *S. rufus*; in winter the body is more or less completely shining grey, nearly white, with the tail and ear-tufts red. In some specimens there is also a trace of the red colour on the dorsal line, head, and legs.

SCIURUS VULGARIS TYPICUS.

Hab. South Norway and Sweden.

Colour—in summer the body resembles in its brownish-red tints that of *S. leucurus*, but the tail is red, and does not bleach when the hairs are old and worn; in winter, the body-coat is composed of soft greyish-brown hairs, the summer tints remaining visible to a variable extent on the dorsal line and legs.

SCIURUS VULGARIS CALOTUS Gray, *Ann. Mag. N. H.* xx. p. 272 (1867).

Hab. Eastern Siberia, the exact limits uncertain; but specimens in the British Museum labelled as from Wilni (Siberia), Seoul (Corea), Southern Manchuria, Sachalin Island, Pekin, and Nepal all appear to belong to a single form.

Colour—in winter darker than *S. varius*. I have seen no summer skins which are not melanisms, but a winter skin which I purchased at Hakodate, Yezo Island, shows a trace of rufous colour on the central dorsal line.

This subspecies might possibly prove to be identical with that from the River Obi, to which the name of *S. vulgaris argenteus* had been given by Kerr (*op. cit.*).

In conclusion Mr. Barrett-Hamilton said that he ventured to suggest that when a further knowledge of the local variations of European mammals should have been gained, it might be found that the European Continent might be divided, for the purposes of study of the geographical distribution of mammals, into some such areas as those represented by the different subspecies of Squirrels to which he had now drawn attention.

The following papers were read:—